

REMARKSSummary Of The Office Action

Claims 20-39 are pending.

Claims 20-39 have been rejected under 35 U.S.C. § 112, first and second paragraphs.

Claims 20-31 and 36-39 have been rejected under 35 U.S.C. § 103(a) as obvious from Barton in view of Carr et al. U.S. Patent No. 5,011,520 ("Carr"). Claims 32-35 have been rejected under 35 U.S.C. § 103(a) as obvious from Barton and Carr in view of Wofford et al. U.S. Patent No. 5,011,520 ("Wofford").

Applicants' Reply

Applicants respectfully traverse the prior art rejections.

Applicants have further amended claim 20 and 39 to clarify the structure of liquid jet pump 3. No new matter is added. (See specification ¶ [0013] and FIG. 1).

As previously noted, "a liquid jet pump" as understood by a person of ordinary skill in the art, and as shown in replacement FIG. 1, consists not only of a constricted nozzle, but also a housing enclosing the constricted nozzle. The housing has suction port, which is connected to bottom of the reaction chamber. The constricted nozzle itself is an end of a supply tube extending through the wall of the housing from a pump 6. A drain-off tube is disposed opposite the constricted nozzle 3.2. The drain-off tube which also extends through the wall of housing into a reservoir, which feeds the pump/supply tube.

Claim 20 as amended, now explicitly calls for “a constricted nozzle . . .
configured to eject a horizontally directed liquid jet; and
a liquid jet drain-off tube having an end opening disposed opposite the constricted
nozzle to directly receive and drain the directed liquid jet ejected from the constricted nozzle.

Prior art rejections

For brevity, applicants do not reproduce, but incorporate by reference the Remarks presented in their previous Replies (See e.g., Replies mailed December 14, 2006, September 8, 2006, April 24 2007, October 24, 2007 etc.). Applicants request the Examiner kindly reconsider the Remarks presented in the previous Replies.

Applicants note with appreciation that the Office Action concedes that Barton does not disclose the specific liquid jet pump struture recited in the claims.

Here, applicants again submit that Carr does not teach “a liquid jet pump” as that term is understood by persons in the art or as specifically claimed. As previously noted, the arrangement of Carr’s “Hydrodynamic Fume Scrubber” is not suitable for generating the low pressures required for plasma operation.

Applicants note that the present Office Action at §2 page 3 mistakenly states that Carr teaches “a liquid jet pump.” In particular, the Office Action (see e.g., the paragraph straddling pages 3-4) mistakes Carr’s scrubber flow constriction 90 as a liquid jet nozzle and mistakes Carr’s scrubber drain pipe 28 as a liquid jet drain-off.

Careful reading of Carr (e.g., Fig. 5 and related description col. 8 lines 14-47) shows that Carr’s flow constriction 90 is a constriction in the flow of scrubbed effluent gasses

and is not at the end of supply tube 96. Carr's pipe 96 ends in spray nozzles 86 which generate a spray field in plenum 82. (See e.g., col. 8 lines 28-43, and FIG. 5). Further, careful reading of Carr shows scrubber discharge pipe 28 merely carries "discharged water solution containing soluble and wetted silica particles [i.e. scrubber waste] out of the scrubber." (See e.g., Carr col. 5 lines 55-60).

Thus, the combination of Barton and Carr does not show, teach or suggest applicants' waste gas cleaning system (for removing harmful and/or toxic gases from a gas stream) that includes:

a reaction chamber for treating . . . having an inlet for receiving a gas stream to be treated and an outlet;

a plasma source coupled to said reaction chamber . . . [to] form a plasma therein; and

a liquid jet pump . . . [that] comprises:

a housing having the suction port that is connected to reaction chamber;

a constricted nozzle disposed within the housing, wherein the constricted nozzle is an end of supply tube that extends through a wall of housing and is configured to eject a horizontally directed liquid jet; and

a liquid jet drain-off tube having an end opening disposed opposite the constricted nozzle to directly receive and drain the horizontally directed liquid jet ejected from the constricted nozzle.

Accordingly, independent claims 20 and 39 in the instant application are not obvious from, and patentable over, the combination of the cited prior art.

Dependent claims 21-38

Dependent claims 21-38 are patentable over the cited references — Barton and Carr, for at least the same reasons that parent claim 20 is patentable over these references.

With respect to claim 24, an additional reason is that the systems of Barton and Carr cannot technically achieve the claimed low pressure ranges 30 mbar- 100 mbar, as is readily understood by a person of skill in art.

With respect to claim 28, an additional reason is that the systems of Barton and Carr do not disclose a secondary air inlet to control the negative pressures .

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Conclusion

Applicants respectfully submit that this application is now in condition for allowance. Reconsideration and prompt allowance of which are requested.

Applicant respectfully requests that the Examiner should kindly contact the undersigned attorney for a telephone interview in case there remain any outstanding issues.

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